

What is claimed is:

1                    1.            A flaw inspection method by magnetic particle testing, comprising:  
2                    obtaining an image of a surface of a sample to be inspected by using a  
3                    color video camera where magnetic particle is coated;  
4                    extracting a flaw candidate of said inspected surface by processing the  
5                    obtained image;  
6                    displaying an image of the extracted flaw candidate on a display screen;  
7                    and  
8                    storing the displayed image to a memory.

1                    2.        The flaw inspection method according to claim 1, wherein the  
2        image stored in the memory is an image of a flaw extracted from the flaw candidate.

1                   3.       The flaw inspection method according to claim 1, wherein the flaw  
2   candidate is detected by using information on luminance of a green (G) signal component  
3   among three RGB primary color signals from the color video camera.

1                   4.       The flaw inspection method according to claim 1, wherein the  
2 image obtained includes a positional information and the positional information is  
3 displayed on the display screen with the image.

1           5.       A flaw inspection method by liquid penetrant testing, comprising:  
2           illuminating a surface of a sample to be inspected with polarized light;  
3           obtaining an image of the surface illuminated with the polarized light;  
4           extracting a flaw candidate from the detected image of the surface by  
5   processing the obtained image; and  
6           displaying an image of the extracted flaw candidate.

1           6.     The flaw inspection method according to claim 5, wherein a  
2 chromaticity of the obtained image is converted using a parameter.

1           7.     The flaw inspection method according to claim 6, wherein the  
2 image is detected by using a color video camera and the parameter for converting the  
3 chromaticity of the image is unique to the color video camera.

1           8.     The flaw inspection method according to claim 5, wherein the  
2 image displayed is associated with a positional information.

1           9.     The flaw inspection method according to claim 8, wherein the  
2 positional information is obtained with the image.

1           10.    The flaw inspection method according to claim 5, further  
2 comprising:  
3           detecting a flaw from the extracted flaw candidate; and  
4           storing an image of the detected flaw into memory.

1           11.    A flaw inspection method, comprising:  
2           illuminating a surface of a sample to be inspected with light;  
3           obtaining an image of the surface;  
4           extracting a flaw candidate of the inspected surface by processing the  
5 obtained image;  
6           displaying an image of the extracted flaw candidate;  
7           detecting a flaw from the extracted flaw candidate; and  
8           storing an image of the detected flaw into memory.

1           12.    The flaw inspection method according to the claim 11, further  
2 comprising:  
3           re-displaying the stored flaw image.

1           13.    The flaw inspection method according to the claim 11, wherein the  
2 light illuminating the sample surface is polarized light.

1           14.    The flaw inspection method according to the claim 11, wherein the  
2 light illuminating the sample surface is ultra violet light.

1           24.     A flaw inspection apparatus based on flaw testing, comprising:  
2     illumination means for illuminating a surface of a sample to be inspected;

a color video camera which obtains an image of the surface;  
flaw candidate extraction means for extracting a flaw candidate of the surface from the image obtained by said color video camera;  
display means for displaying an image of the flaw candidate extracted by said flaw candidate extraction means;  
flaw detection means which detects a flaw from the displayed flaw candidate; and  
memory means for storing the image of flaw detected by the flaw detection means.

25. The flaw inspection apparatus according to claim 24, wherein the display means displays the image of the flaw candidate accompanied with a positional information.

26. A flaw inspection apparatus based on flaw testing, comprising:  
a light source which illuminates a surface of a sample to be inspected;  
a color video camera which obtains an image of the surface;  
a chromaticity converter which converts a chromaticity of the image obtained by the color video camera by using a conversion coefficient which is unique to the color video camera;  
a flaw candidate extractor which extracts a flaw candidate of the surface from the image obtained by said color video camera which chromaticity is converted by the chromaticity converter;  
a display which displays on a screen an image of the extracted flaw candidate which chromaticity is converted;  
a flaw detector which detects a flaw from the displayed flaw candidate;  
and  
a memory which stores the image of flaw detected by the flaw detector.

27. The flaw inspection apparatus according to claim 26, wherein said chromaticity converter obtains conversion coefficients for converting RGB(Red, Green and Blue) chromaticity values unique to said color video camera into reference xy chromaticity values.

1                   29.     A computer memory storing code for a flaw inspection method  
2     using an object to be inspected, wherein said computer memory comprises:  
3                   code for obtaining an image of a surface of the object;  
4                   code for converting a chromaticity of the obtained image;  
5                   code for displaying on a screen an image of the object which chromaticity  
6     is converted from the obtained image;  
7                   code for indicating a flaw candidate on the screen; and  
8                   code for displaying a flaw image on a screen detected from the candidate.